Missouri Botanical Garden
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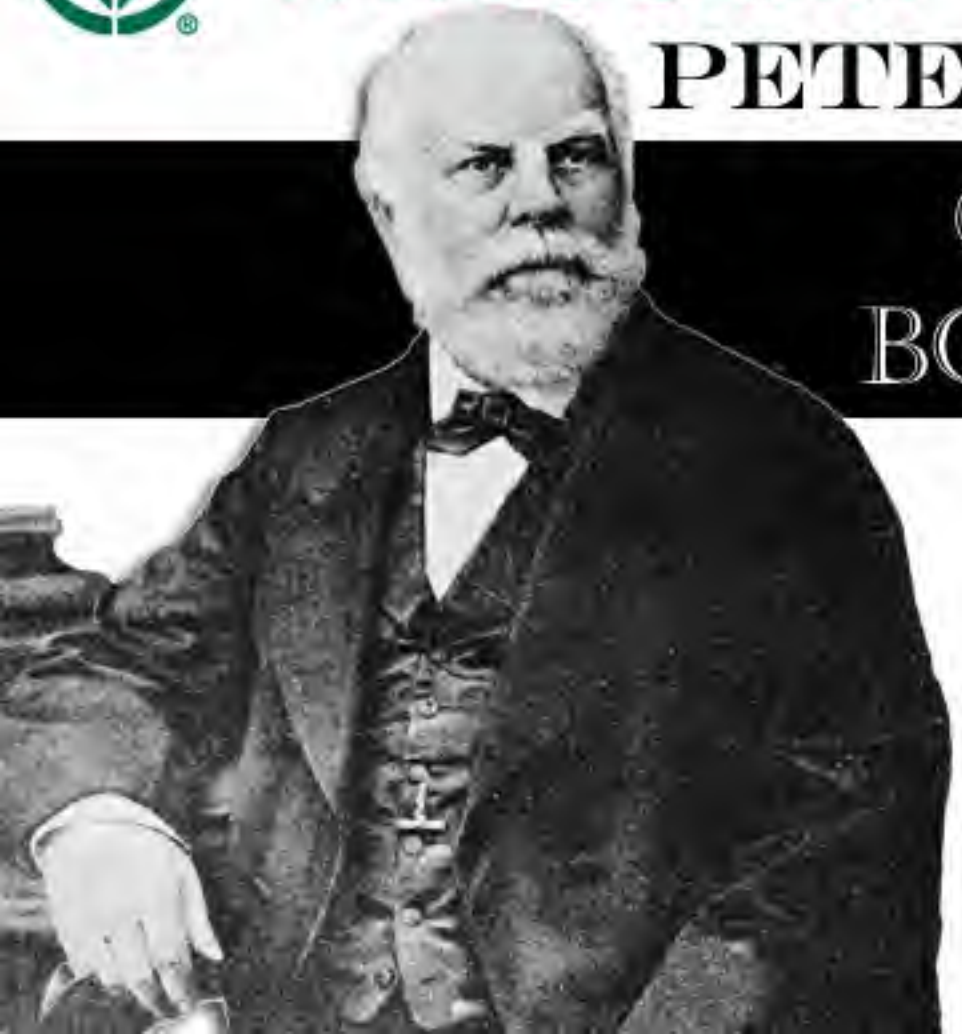
George Engelmann Botanical Notebooks



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verse head, a short ovipositor, and normal tibiæ and tarsi ♂ ♀. He was unacquainted with ♂, and therefore of course failed to recognize the singular sexual differences in the tarsi. Cresson, on the other hand, as well as Say, entirely overlooked the twisted 4 front tibiæ and the short 3d and 4th tarsal joints of the ♀.

Labena grallator, Say (= *Mesochorus fuscipennis*, Brullé).—♀.—Rufous. *Head* polished and glabrous; face and clypeus opaque, with rather coarse, transverse rugæ; the foveæ at the tip of the face rather small and indistinct. Clypeus with its base in a circular arc of 60°, its tip in a circular arc of 120°. Orbits, especially in front, tinged with yellow; tip of the mandibles black. Antennæ $\frac{2}{3}$ as long as the body; the flagellum with its extreme base and tip slightly tapered, its 1st joint $2\frac{1}{2}$ times as long as wide, the 2d shorter by $\frac{1}{3}$, the rest very slowly shorter and shorter. The third $\frac{1}{4}$ of the flagellum tinged with yellow, the terminal $\frac{1}{4}$ with black. *Thorax* subopaque, finely and confluently punctured, the disk and hind edges of the mesothoracic pleura glabrous and polished. Metathorax with the basal area subquadrate, the central area hexagonal and $\frac{1}{2}$ longer and wider than the basal area with its posterior side sometimes indistinct, the lateral areas strongly constricted by their cross-carinæ and open behind, so that the posterior area is almost obsolete. Tegulæ, a line under the front wing, both scutels and the areas on either side of them, a longitudinal line on each side of the mesonotum, a line under the humeral suture, the hind part of the metathorax and the anterior edge of its pleura, all tinged with yellow. Many of the sutures, both above and below, stained with black. *Abdomen* glabrous and polished at base, subopaque, with very minute, dense punctures towards the tip. Joint 1, $3\frac{1}{2}$ times as long as wide, $2\frac{1}{2}$ times as wide at tip as at base, its sides straight for $\frac{2}{5}$ of the way to the tip, thence with the usual tubercle, immediately behind which they are slightly constricted and thence to the tip very gently convex. Joint 2 longer by $\frac{1}{2}$ than wide and shorter by $\frac{2}{5}$ than joint 1. Extreme tip of joint 1, and obsoletely so of one or two of the following joints, yellow; the sutures toward the base of the abdomen blackish. Venter reddish-brown except at tip, the tip of joints 1 and 2 tinged with yellow. Ovipositor $\frac{2}{3}$ as long as the body, rufous, its tip black; sheaths yellowish rufous, their tips black. *Legs* with the tarsi and especially the tibiæ tinged with yellow. Front tarsal joints proportioned as 14, 7, 2, 2, 7; middle tarsal joints as 14, 4, 2, 2, 12; hind tarsal joints as 14, 7, 2, 2, 9. *Wings* shining umber brown, with their extreme base and an ill-defined cloud reaching from the base of the stigma to the hind edge of the 2d cell of the limb, hyaline; hind wings with the postcostal space and sometimes also with an elongate discoidal cloud, hyaline. Veins black; stigma rufous, $4\frac{1}{2}$–5 times as long as wide. Areolet large, rhomboidal, with the 2d recurrent vein entering it slightly beyond the middle, and with its anterior angle slightly truncate. Bullæ all distinct, large, white, and encroaching on the brown membrane of the wing. Length ♀ .76 (.60 Brullé) inch. Front wing ♀ .64 inch. Ovipos. .53 (.43 Brullé) inch.

0 1 2 3 4 5 6 7 8 9 10
cm
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parapsidal grooves almost obsolete, the space behind the wings about as long as that before them. Scutel subquadrate, flattish. Metathorax subcubical, its sides a little convergent behind, the carinate areas generally, except the posterior one, all distinct. *Abdomen* subpetiolated, elongate-clavate ♂, clavate ♀, ♂ ♀ with their sides nearly straight to beyond the middle, the tip of joint 5 ♂, joint 6 ♀, being about the widest part. Joint 1 ♂ ♀ very long; joint 2 longer than wide; 3–6 ♂ nearly square; 3–7 ♀ shorter than long and subequal. Venter unusally corneous, flattened, and with a slight longitudinal carina; anus ♀ slit, as it is termed. Ovipositor about as long as the abdomen; sheaths moderate, not tapered. *Legs* moderate; in all 6 legs ♀ tarsal joints 3 and 4 very short, and joint 3 acutely bilobate; in the middle legs ♀ tarsal joint 2 likewise short, and the tibiæ twisted as in *Odontomerus* ♀; in all 6 tarsi ♂ only joint 4 very short, and all the joints simple. Both front and middle tibiæ ♀ inflated near their tip. Hind coxæ ♂ ♀ long and slender, and about as long and stout as the femora. Spurs normal. Claws simple, moderately long, much longer than the pulvillus. *Wings* moderate. Stigma and radial area elongate. Areolet large, rhomboidal, its anterior angle often more or less truncate. The 1st recurrent vein almost straight; the 2d recurrent vein biangulated. Bullæ 4, B, C, D, and E; B on the posterior end of its vein, C close to the areolet, D between the two angles of its vein, and E nearer to the tip than to the base of its vein.

Closely allied to *Xorides*, Grav., by its face narrowed below, and to *Odontomerus* by the singularly twisted middle tibiæ ♀, which character is here subobsoletely shown also in the front tibiæ ♀. Differs from all the other genera belonging to this group, except certain *Echthrus*, viz., *annulicornis*, n. sp., and *ornatipennis*, Cress., by the obsolete parapsidal grooves and the large areolet. From *Echthrus* it is at once separated by the emarginate eyes, the long clypeus, the singular structure of ♀ legs, and the separation of bullæ C and D. The abdomen ♂ is not greatly elongate and almost linear, as in *Xorides* ♂ and *Xylonomus* ♂, nor has it the tips of its joints emarginate as in *Xorides* ♂. Brullé entirely overlooked some of the most remarkable characters of this genus, e.g. the face narrowed in front, the subcubical head, and the bilobate 3d tarsal joint ♀, and confounded it with *Mesochorus*, Grav., which appertains to an entirely different group, and has a trans-

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Polyanthes tuberosa

H. Wendl.

Oct 14 1872

anther green
emarginate Color
affix the short
Broad filament
Color the middle
included

x4

x4

x4

Stigm 3 lobed, Color
emarginate, stigmatic
surface
Fertilized by the own
pollen

Diam Pollen x415

spherical, large

$\frac{31-43}{415}$ = 0,074 – 0.103

Sug $\frac{1}{10}$ mm

both 35–41,5 = 0,084–0.100

x4

x10

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415
2500 0.084
3320
1800

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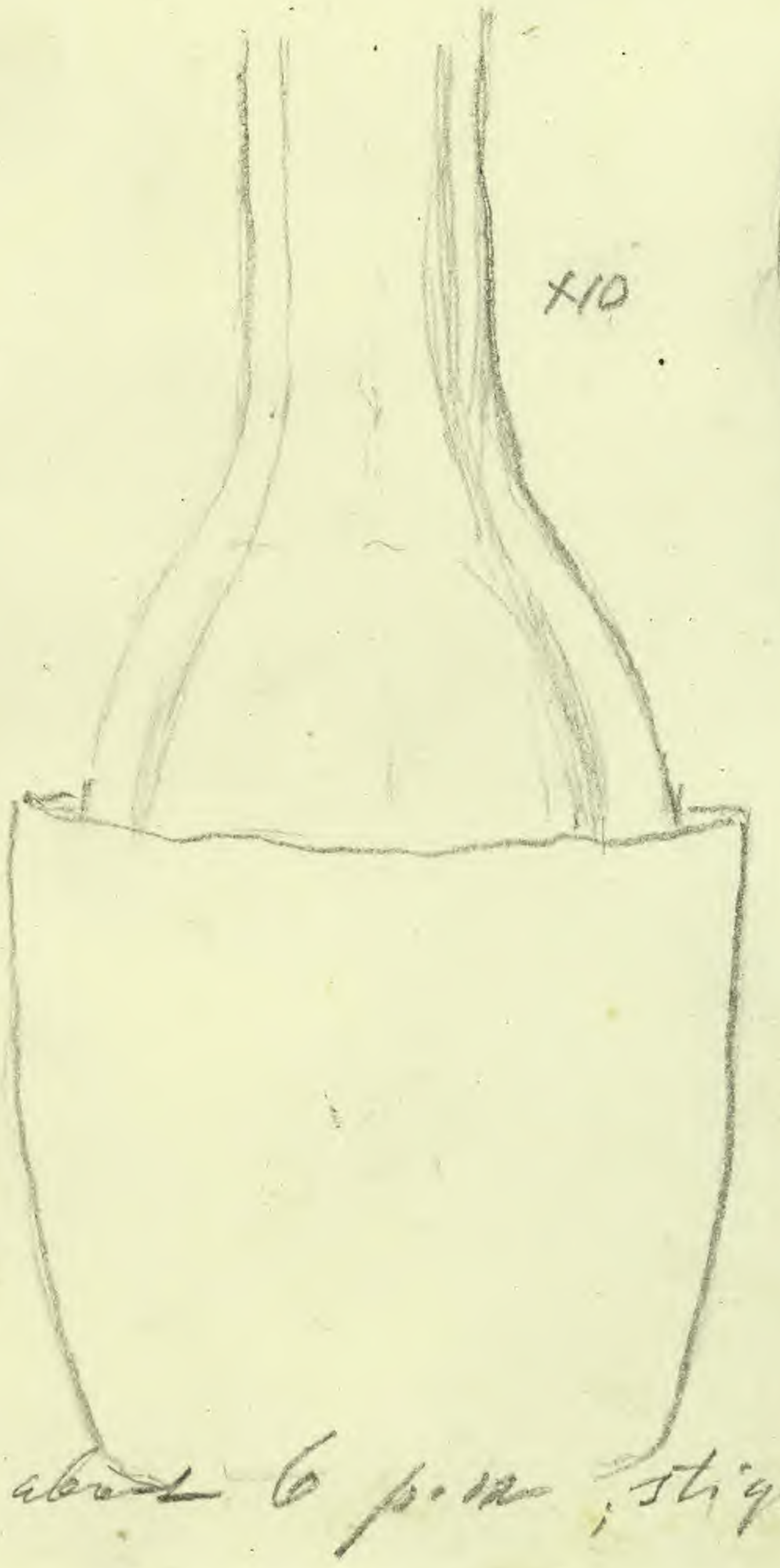
Polyanthes tuberosus

Aug 23 1873

Seed of flow just opened at 6 pm. at 5 it was still closed. Anthers shedding their Pollen. At 8 pm anthers off site. stigmas closed just reaching the base of the filaments.



×10

Stigma ×10 of opening flower groove from middle of stigma running down the style and free part of ovary

one third of ovary free

flowers open about 6 p.m.; stigmas expire 24 h later

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anther before opening

x 10

Polygonatum tuberosum

bud in morning

before opening

Aug 25 1873

Pollen grain

x 415

ventral

Dorsal

ovule of same

x 60 flower bud

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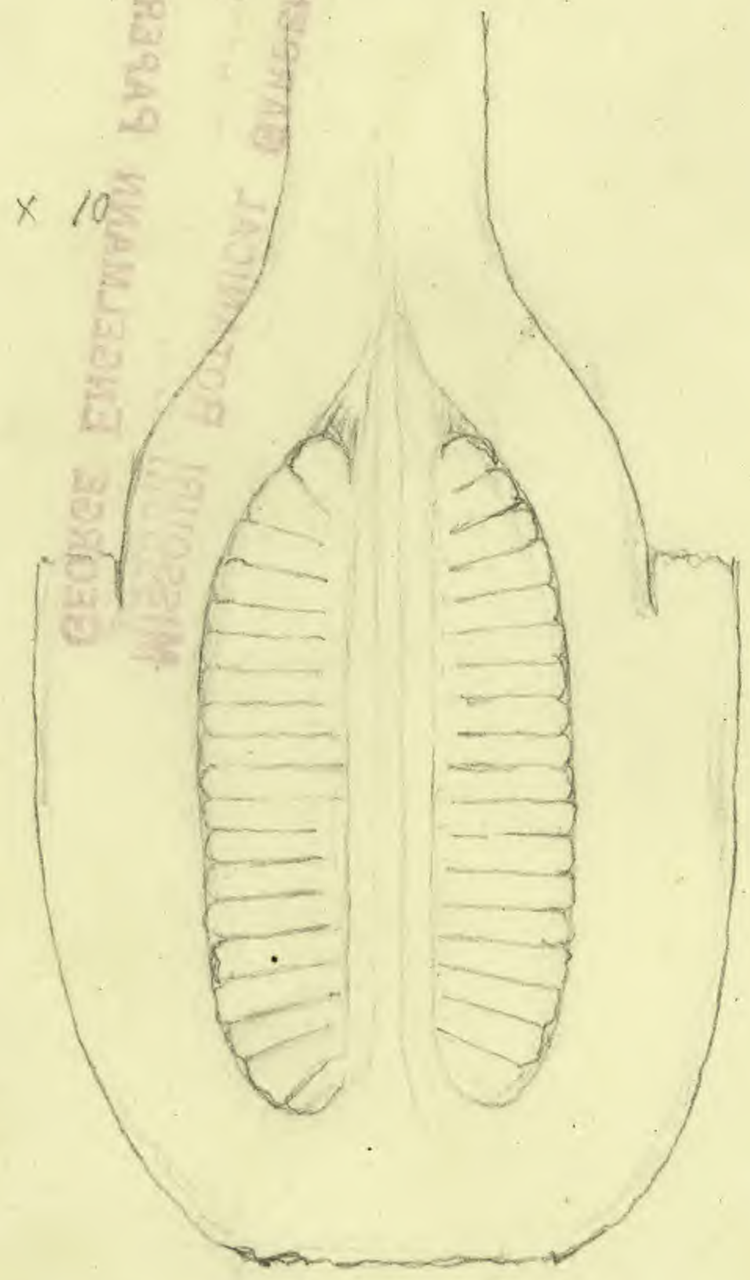
Polyanthes tuberosa

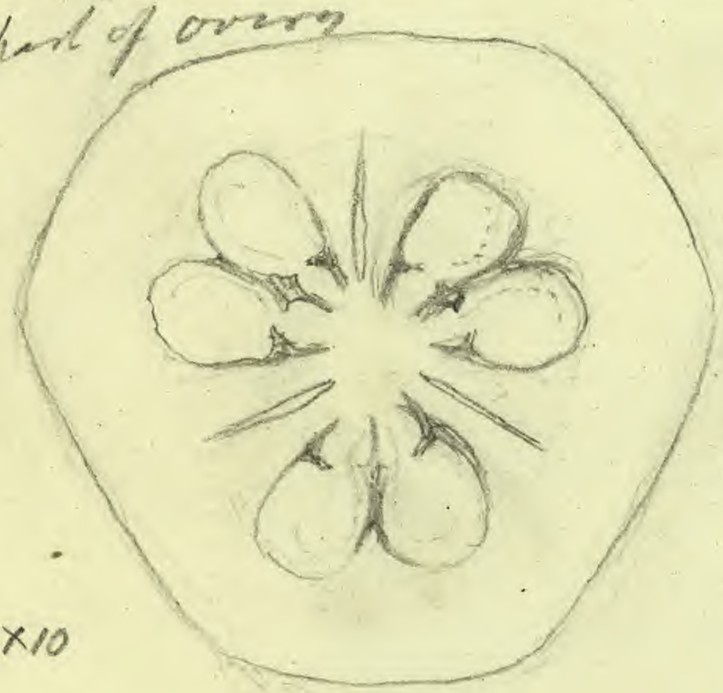
Aug 26 & 27 1877



× 10

about 12–20 ovules in each row = 100–120 in all

Sect through the middle part of ovary



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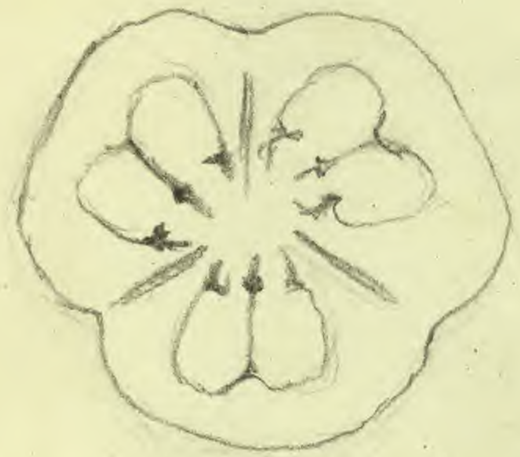
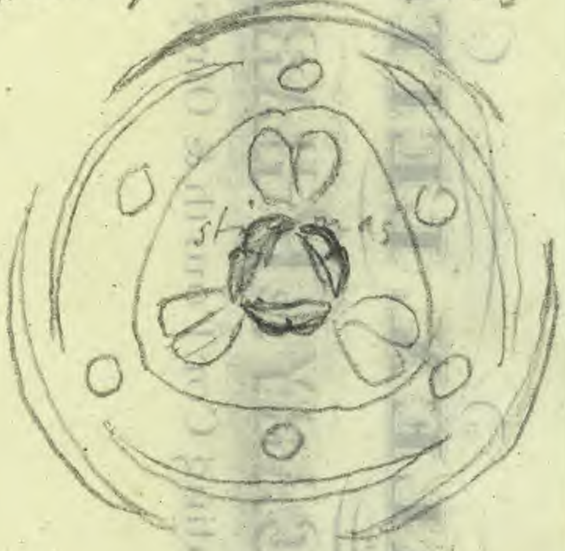


Sect through the fr upper part of ovary

In Yucca the 3 stigmas correspond with carpels

In Polyanthes (& Agave?) they alternate with them being composed of parts of 2 carpels



Carpels opposite external lobes stigmas (grooved on back) opposite interior lobes of perianth

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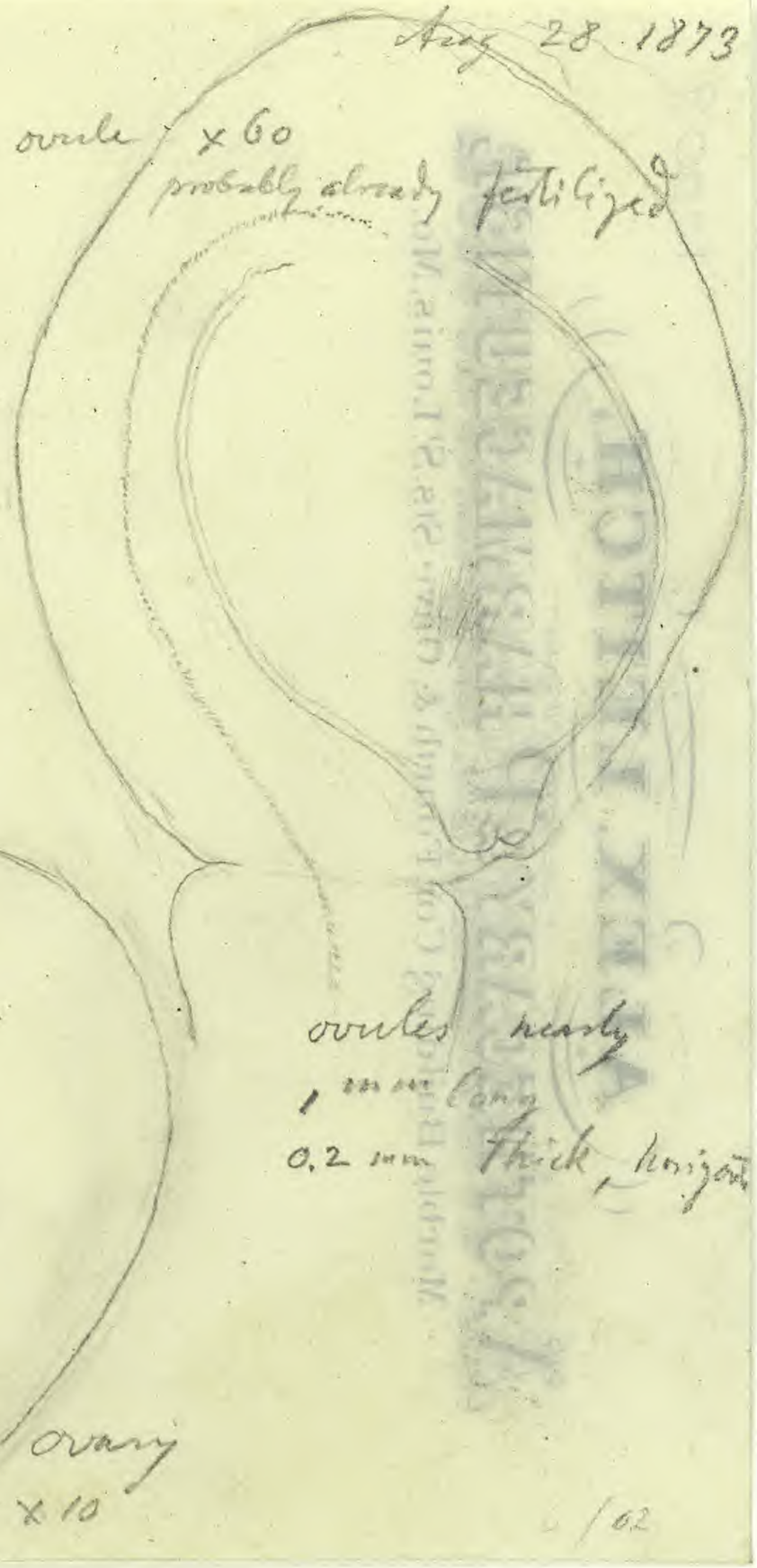
Polyanthes tuberosus

Aug 28 1873

stele
stamen x4

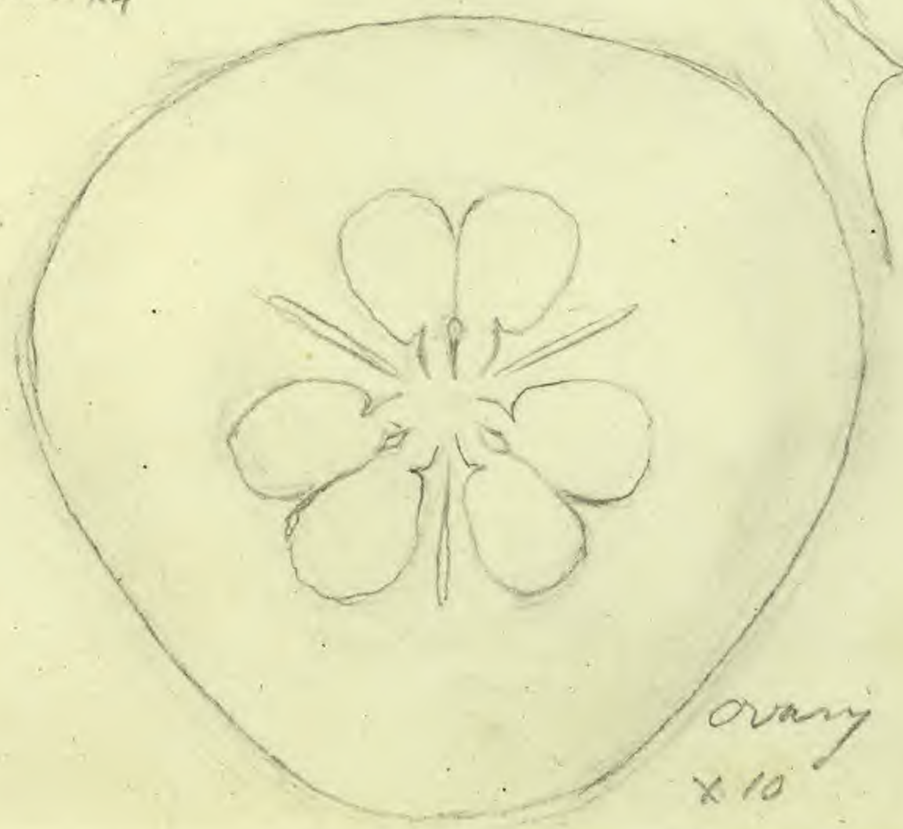
open stigma
x4

ovule x60
probably already fertilized



2d evening of open flower
2d stage: anthers effete
pistil expanded, style
elongated

lobes of stigma
correspond with inner lobes
of perianth



ovary
x10

ovules nearly
1 mm long
0.2 mm thick, horizon

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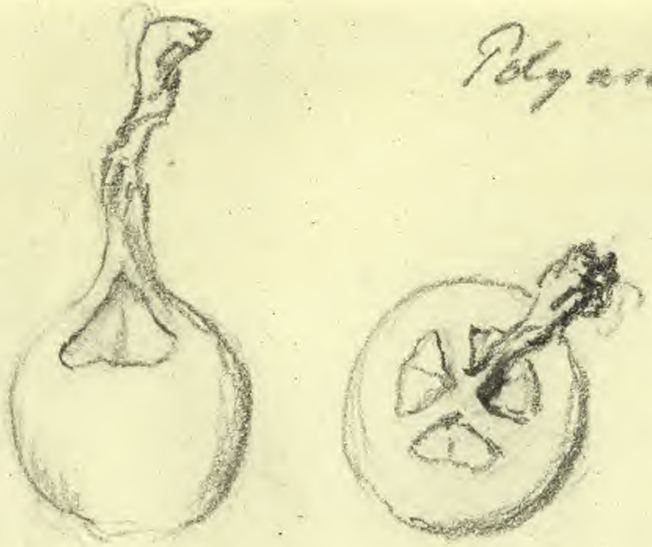
Polygonatum tuberosum Octob 2 1873



full grown capsule, not quite mature globose upon part naked pericarp dried, running it torn in 3 slits - united upwards in the thickened fruit part of pericarp

Drawn from memory, as I had no fruiting specimen as well as all the flowering ones were cut off and taken

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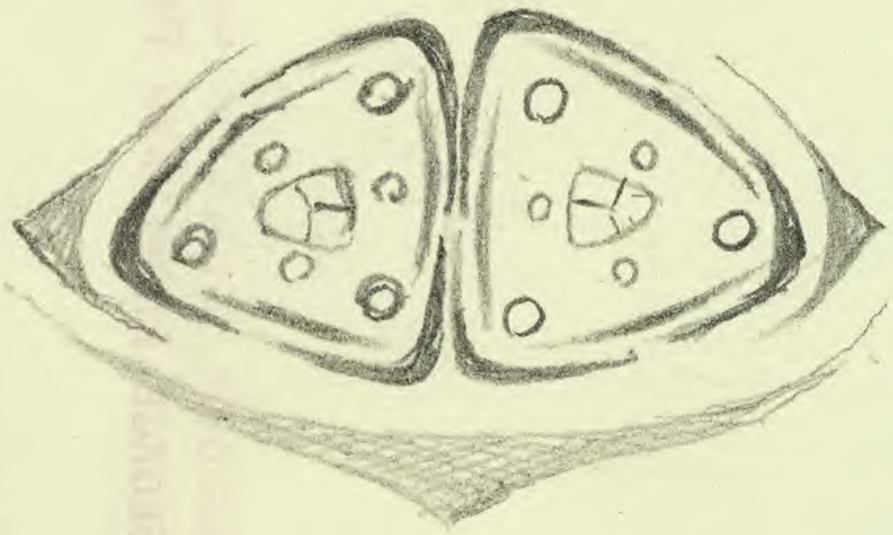
Poly anthes tuberosus

Aug 27 1875



Pedicels about none
or obsolete
lateral bracts persistent
after the flower has fallen
corresponds to outer angles
of flower (outer sepal)
but overlaps more to
wards the posterior
face.

segments (correspond to faces, not
& set of ovary angles of ovary
and style)

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